REL Graphic Design

Graphic Design for Researchers

INTRODUCTION

The cliché is true—a picture really is worth a thousand words. In today's world, graphic design plays a large role in shaping how most people understand and use information. This principle applies to researchers, as well.

WHY THIS GUIDE?

Technology continues to radically change how we create and consume information. Today, news, reports, and other material are often delivered quickly through pictures, colors, or other eye-catching visual elements. Words still matter, but they may be tweeted, viewed on a smartphone, or placed in a call-out box in a report. The design of these items can greatly affect whether your reader notices, reads, or understands the words that you write.

This guide offers a basic overview on how researchers can effectively use design to create engaging and visually appealing Regional Educational Laboratory (REL) products. It will cover some key concepts behind good design and discuss how to use basic elements like photographs, images, color, tables, figures, and type to create useful publications and digital products. The guide also touches on how researchers can use data visualization to make complex concepts accessible.

KEY CONCEPTS

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Effective graphic design rests on three key principles: a good foundation, simplicity, and choosing the correct format.

- **Build a visual foundation.** Well-executed, thoughtful design should support, enhance, and clarify meaning. Like clear writing, good design serves as a pathway to guide busy readers to the ideas and information that you want to impart.

- **Keep it simple, elegant, readable.** Successful design rests on simplicity, restraint, and order. It should contribute to rather than distract from the story you're trying to tell. Like searching for a set of keys on a messy table, readers faced with too many design elements can miss important concepts in the visual clutter.

- **Form follows function.** We live in a dynamic world of information delivery across multiple platforms, devices, and formats, each with its own visual aesthetic, technical requirements, and user expectations. When you are creating a product, it's important to consider how it will look—not just in print or on the Web, but also on tablets and smartphones, where users are increasingly accessing information.

Typo-graphy

BASIC ELEMENTS OF GRAPHIC DESIGN

In the same way that proper building materials create a solid dwelling, the following basic elements, when effectively combined, can create a successful, engagingly designed product.

Mind your p's and q's. How your text looks can enhance what you've written. In fact, the actual fonts or typeface used can either aid or distract the reader. If your font choice isn't dictated by a style guide, aim for a clean, polished, readable font suited to the format you'll be using. For example, for more formal publications, it's common to choose a serif font, or a font with "tails" on the ends of the characters (**p's and q's**). For Web-based content, most designers choose a sans serif font, which is easier to read on screen (**p's and q's**). Also, to give the reader's eye a rest, vary font choices and styles in headings and subheadings. Keep text treatments, such as bold, italics, or underlining, simple and consistent. Text treatments can enhance meaning, but they can also overwhelm readers.
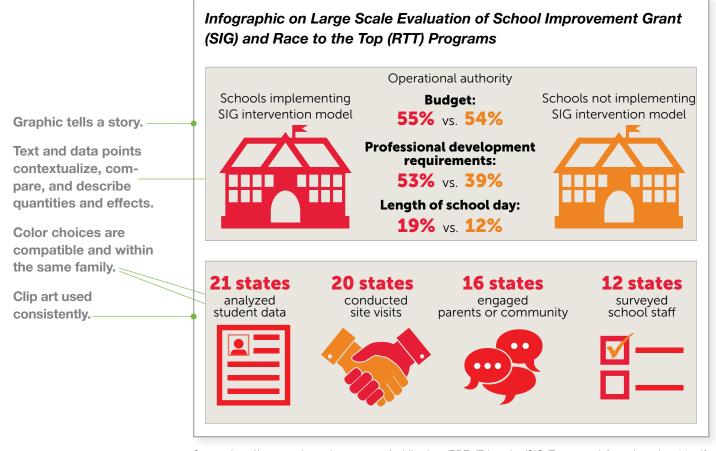
Use color to make a splash or mute a statement. Used wisely, color can highlight important concepts, but observe the following key principles to keep your products visually appealing and focused on meaning and message.

- **Consider choosing colors from an existing palette,** such as an organization's logo or a branded event like a conference.
- **Choose colors that are easy to read.** Steer clear of pastel or light text choices.
- **Be consistent.** Keep your chosen color palette consistent throughout all design elements in the document. Also, when using charts, graphs, or figures, don't use blue in one chart and green in another to represent the same data point.
- **Use similar color tones.**

Do's and Don'ts

Do consider using a classic serif font like

Times New Roman

for print.

Do try a sans serif font like

Arial

for headings and web pages. Do keep choices consistent.

Don't use styled fonts like

Tekton Pro.

Don't overuse bold, italics, or underlining.

Don't use pastel or light colors for text.

- **When choosing color combinations, consider limitations caused by red-green color blindness.** For more help, download this tool: http://www.visionaustralia.org/digital-access-cca.

- **Remember that your end user may print in black and white.** To that end, choose colors that will print with good black and white contrast.

Data visualization. Visualization presents data, stories, or information in a visually compelling way. Tables, figures, charts, line drawings, animations, cartoons, and other visual elements can all be used to create time-lapse or interactive images, maps, infographics, or other visual products. Data visualization creatively combines items into a cohesive narrative and simply, effectively, and instantly depicts relationships, makes comparisons, illustrates concepts related to time, and describes quantity or effects. In creating data visualization projects, work with a trained designer to bring

Graphic tells a story.

Text and data points contextualize, compare, and describe quantities and effects.

Color choices are compatible and within the same family.

Clip art used consistently.

Infographic on Large Scale Evaluation of School Improvement Grant (SIG) and Race to the Top (RTT) Programs

Operational authority

Schools implementing SIG intervention model

Budget:
55% vs. **54%**

Professional development requirements:
53% vs. **39%**

Length of school day:
19% vs. **12%**

Schools not implementing SIG intervention model

21 states
analyzed student data

20 states
conducted site visits

16 states
engaged parents or community

12 states
surveyed school staff

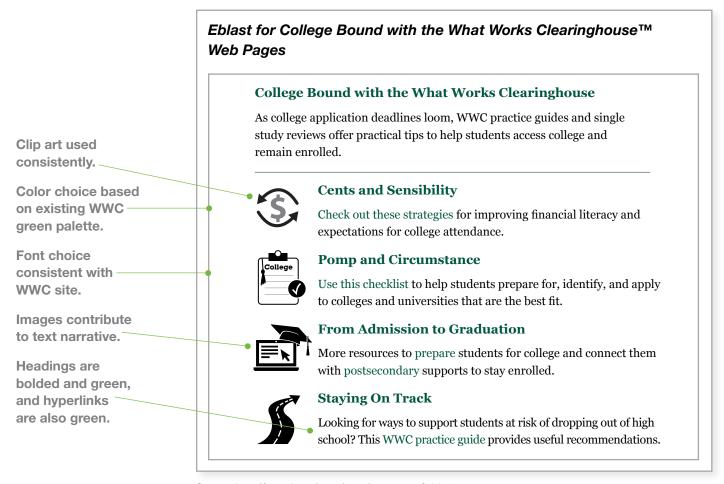Source: http://www.mathematica-mpr.com/publications/PDFs/Education/SIG_Turnaround_fact_sheet_jan_14.pdf

> **"Graphics reveal data. Indeed graphics can be more precise and revealing than conventional statistical computations."**
>
> Edward Tufte

your ideas to life. However, no matter what direction or format your data visualization takes, it should achieve the following goals:

- **Tell a story.** Use data and graphics to create a cohesive narrative.
- **Provide clarity.** Refine and edit elements, don't decorate or distract.
- **Give meaning.** Use elements to illustrate concepts, themes, and findings.
- **Place information in context.** Show relationships, patterns, and comparisons, such as how big, how small, how long?

Do's and don'ts of illustrations and clip art. Free clip art, line drawings, and illustrations are common features of many software programs. But clip art and illustrations should always add value. If you decide to use free clip art in a document, be sure that the pieces you choose are visually and thematically linked. For example, don't

Clip art used consistently.

Color choice based on existing WWC green palette.

Font choice consistent with WWC site.

Images contribute to text narrative.

Headings are bolded and green, and hyperlinks are also green.

Eblast for College Bound with the What Works Clearinghouse™ Web Pages

College Bound with the What Works Clearinghouse

As college application deadlines loom, WWC practice guides and single study reviews offer practical tips to help students access college and remain enrolled.

Cents and Sensibility

Check out these strategies for improving financial literacy and expectations for college attendance.

Pomp and Circumstance

Use this checklist to help students prepare for, identify, and apply to colleges and universities that are the best fit.

From Admission to Graduation

More resources to prepare students for college and connect them with postsecondary supports to stay enrolled.

Staying On Track

Looking for ways to support students at risk of dropping out of high school? This WWC practice guide provides useful recommendations.

Source: http://ies.ed.gov/ncee/wwc/news.aspx?sid=03

Professional Photography

Subject is well lit, colors are believable, image is cropped to highlight center of interest.

Subjects are not well defined, colors are dim, center of interest is undefined or was cropped off.

combine a detailed, full color, image of a student and a heavy, line-drawn, black and white icon of a teacher on the same page. Make your choices consistent in appearance. Also be certain that the images are clear, are easy to understand and identify, and provide context.

Focus on photography. Excellent photography can transform a dull report into a dynamic document that readers can't resist. But unless you have access to a professional photographer with high-quality equipment like lighting and backdrops, use photography sparingly. Avoid using snapshots taken with cell phones—even with today's high quality mobile devices. If you must use a digital image taken in-house, be sure that the resolution is set for 300 dpi, and that the image has been at least moderately prepared for production (cropped, edited, and so on) in a professional graphic design program such as Adobe Photoshop (not the image software that comes with most software packages or devices). When photographing subjects, be sure that they have signed a release form that allows their image to be used for publication or public use. Contact your legal department for a standard release form or visit the American Society of Media Photographers website for more examples. Consider purchasing professional images available on the Web through stock suppliers. As of this writing, IES subscribes to a photo service. Check with your program officer to learn more about how to use this service to obtain photos for a REL report. Remember, chances are if you found a photo on the Internet, it is copyrighted content and illegal to use.

Relationships matter. Once you've chosen your visual elements, take a look at your selections. When combined, do all the elements complement one another? Do they create a unified look and feel? If they do, is this the visual "brand" or way that you would like your product to be identified? For example, if it's an e-newsletter, is it short and succinct? Is it created with typefaces, colors, and visual elements that draw the reader in and effectively communicate in a compact space on multiple platforms?

If it's a PDF report, do the elements combine into a professional look that reflects the content and subject matter appropriately?
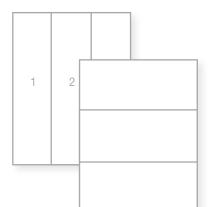
COMPOSITION

If you're satisfied with your choices, it's time to organize them in a layout. When you are designing, certain composition rules usually apply. For example, the rule of thirds suggests laying out a product by imagining that the page is divided into a three-part grid so that the eye envisions horizontal and vertical areas for organizing visual elements. When viewing Web content, the eye typically travels in an F shape, beginning on the left hand side of the page. Therefore, in designing for the Web, aim to have relevant information located in this pattern.

On Web pages, eye-tracking studies show that users skim content in an "F" shape across the page.

Source: http://ies.ed.gov/ncee/wwc/

Using "the rule of thirds," divide your page into grids to organize visual elements.

The final word on white space. Musicians Claude Debussy and Theolonius Monk famously described the value of the silence between the notes in music. The same holds true in visual design. White space on a page serves as a visual rest. Without it, the brain suffers from information overload. For this reason, don't use every available inch of your layout.
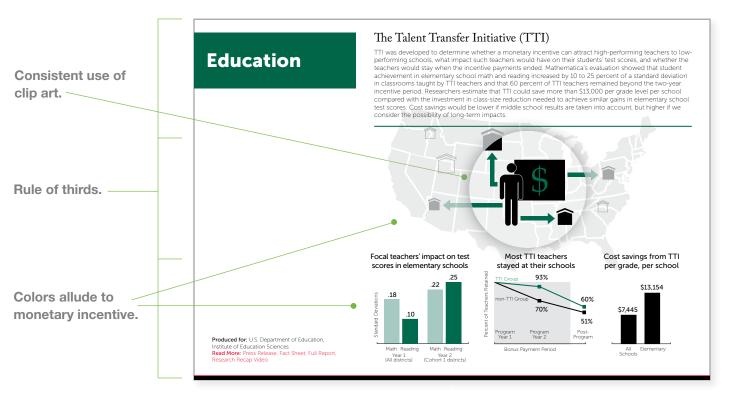
LAYOUT AND PRODUCTION

At this point, you may be tempted to lay out and design your document in Microsoft Word or perhaps Microsoft Publisher. But these software packages have limitations. If you have a knack for visual design, consider investing in what many consider the industry standard of professional design software, the Adobe Design and Web Premium Suite. Training and coursework in using these products is also recommended. However, when creating a new design or template, a high stakes publication, a data visualization piece, or high-volume work, consider hiring a trained, certified graphic designer on staff or a freelance expert.

CONCLUSION

Professionally executed design can transform dense, inaccessible research into provocative and useful publications and digital products. The field of graphic design includes many details and techniques that go beyond the purpose and intent of this guide. But by adhering to the key concepts outlined: (1) a strong visual foundation that supports textual meaning; (2) simplicity, restraint and order; (3) and a format compatible across multiple devices, your research has the power to resonate with and engage audiences with varied levels of expertise. The final pages of this guide offer examples that illustrate creative use of the basic concepts, elements, and principles that we've discussed. We've also included a list of design resources and references.

Data Visualization in Action

Consistent use of clip art.

Rule of thirds.
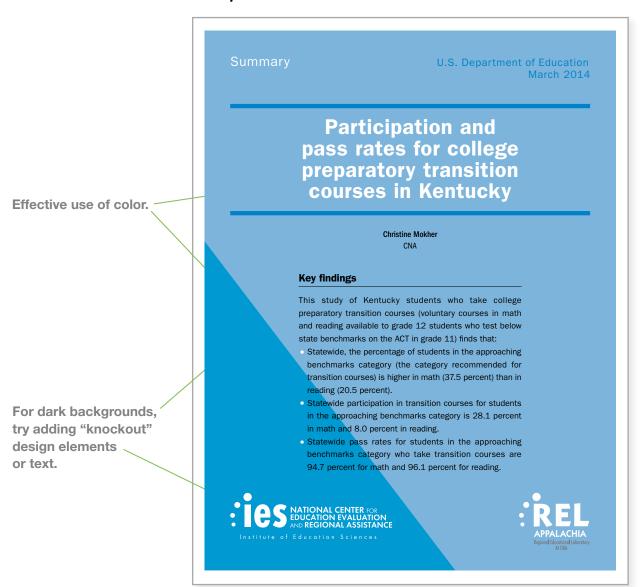
Colors allude to monetary incentive.

Slide 4 of Teacher Transfer Initiative from *Research in Review*
http://www.mathematica-mpr.com/publications/PDFs/2013-Research-Review.pdf

In this slide, the authors visually represent the concepts of whether a monetary incentive would attract high-performing teachers to low-performing schools, what impact such teachers would have on their students' test scores, and whether the teachers would stay when the incentive payments ended. The main image is divided into three sections. Using "the rule of thirds," the visual elements are organized in a format that the reader can follow easily. The contrasting greens and shades of gray also subtly reference the monetary incentive, a key aspect of the study. Finally, clip art is used to convey movement of teachers from high to low-performing schools.

EXHIBIT B

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Example of an Issue Brief

Effective use of color.

For dark backgrounds, try adding "knockout" design elements or text.

Summary   U.S. Department of Education
March 2014

Participation and pass rates for college preparatory transition courses in Kentucky

Christine Mokher
CNA

Key findings

This study of Kentucky students who take college preparatory transition courses (voluntary courses in math and reading available to grade 12 students who test below state benchmarks on the ACT in grade 11) finds that:

- Statewide, the percentage of students in the approaching benchmarks category (the category recommended for transition courses) is higher in math (37.5 percent) than in reading (20.5 percent).
- Statewide participation in transition courses for students in the approaching benchmarks category is 28.1 percent in math and 8.0 percent in reading.
- Statewide pass rates for students in the approaching benchmarks category who take transition courses are 94.7 percent for math and 96.1 percent for reading.

ies NATIONAL CENTER FOR EDUCATION EVALUATION AND REGIONAL ASSISTANCE
Institute of Education Sciences
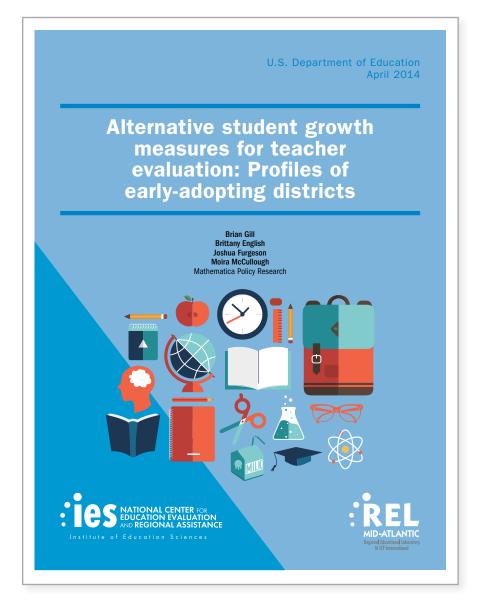
REL APPALACHIA
Regional Educational Laboratory At CNA

Source: http://ies.ed.gov/ncee/edlabs/regions/appalachia/pdf/REL_2014009_sum.pdf

This issue brief could be designed using the graphic design functionality available in Microsoft Word. It features good use of white space, a readable sans serif font, and consistent, visually appealing headers. Subtle color shading and simple yet elegant graphics effectively add visual interest to the text without distracting the reader. Using a technique known as a "knockout," text and design elements are reversed to white on the blue background.

EXHIBIT C

Example of an Issue Brief with Additional Design Elements

U.S. Department of Education
April 2014

Alternative student growth measures for teacher evaluation: Profiles of early-adopting districts

Brian Gill
Brittany English
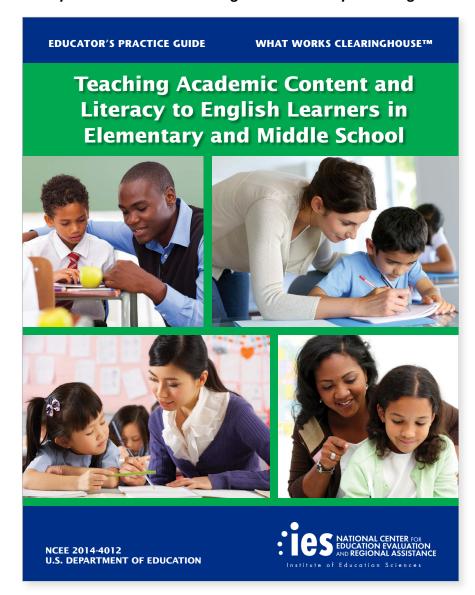Joshua Furgeson
Moira McCullough
Mathematica Policy Research

Source: http://ies.ed.gov/ncee/edlabs/regions/midatlantic/pdf/REL_2014016.pdf

Similar to the previous example, this issue brief could be designed in Microsoft Word. In addition to the features outlined in Exhibit B, this cover adds visually engaging and colorful clip art elements. The clip art is similar in style, thematically consistent with the subject matter of the brief, and eye catching to potential readers.

EXHIBIT D

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Example of a Publication Using Advanced Graphic Design Software
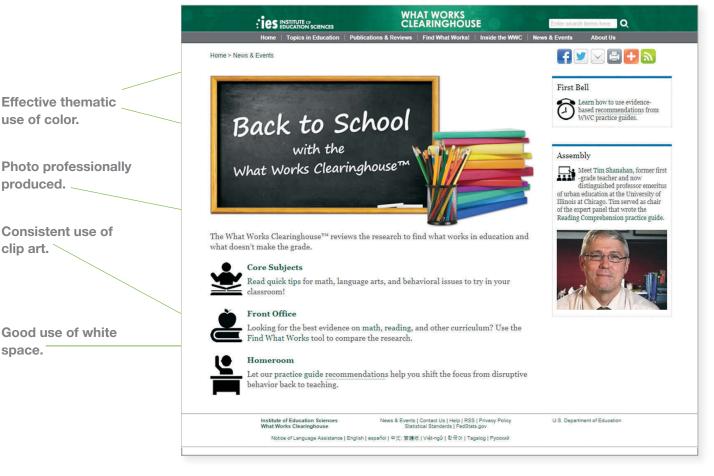

Source: http://ies.ed.gov/ncee/wwc/pdf/practice_guides/english_learners_pg_040114.pdf

A professional graphic designer using a publishing software package—in this case, the Adobe Design and Web Premium Suite—created this practice guide for the What Works Clearinghouse. The stylized cover features high quality photography and other design elements professionally executed. It exemplifies both the opportunities and the necessity of enlisting professional tools and experts in designing high profile documents.

EXHIBIT E

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Professional Illustrations with Impact

Effective thematic use of color.

Photo professionally produced.

Consistent use of clip art.

Good use of white space.

http://ies.ed.gov/ncee/wwc/news.aspx?sid=01

This website content page for the What Works Clearinghouse uses line drawing clip art and bright, cheerful colors in a clean, consistent way that topically corresponds to the subject matter—presenting back-to-school information for teachers of young children. The photograph, a professional head shot, has been produced in Photoshop to visually integrate with the rest of the content. For example, the books in the background have been retouched to reference the stacked books in the page's main illustration.

RESURCES

Poynter News University: https://www.newsu.org/

American Society of Media Photographers: https://asmp.org/tutorials/adults-model-release.html

TED talks on data visualization: http://www.ted.com/topics/visualizations

Easelly beta site for creating and sharing images: http://www.easel.ly/

Create free interactive graphics on http://infogr.am or http://Piktochart.com/

Find examples of infographics on Good.is: http://www.good.is/infographics

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